
Transmission parameters for Meridian Modular Telephones

Meridian Modular Telephones have the following system-defined transmission parameters:

- transmit objective loudness rating (TOLR)
- receive objective loudness rating (ROLR)
- sidetone objective loudness rating (SOLR)

These transmission parameters are defined in the Configuration Record (LD17) and are downloaded to all Meridian Modular Telephones after a system reload (sysload). This accommodates the needs of international installations where different loss and level plans are in place.

Note: The transmission parameters are not downloaded during parallel reload procedures.

The default transmission settings for Meridian Modular Telephones are designed, under the North American loss and level plan, to appear identical at the CO to the settings of 500/2500 type sets. Note that the North American loss and level plan assumes trunk losses of 3 to 4 dB to the CO.

Contact your Northern Telecom representative for the recommended transmission parameters for countries not using the North American loss and level plan.

Receive and transmit objective loudness rating

To obtain optimal transmit and receive performance in North America, it is important that the following transmission parameters be used:

- a transmit offset of -45 dB (LD17 prompt TOLR = 0)
- a receive offset of $+45$ dB (LD17 prompt ROLR = 0)

Table 39 shows the values entered for LD17 prompts ROLR and TOLR and the associated loudness rating for North America.

The ROLR and the TOLR are considered as quantities of loss. Here are some examples:

- If the ROLR of a telephone changes from $+45$ dB to $+50$ dB, there is 5 dB *more loss* and, consequently, the receive path is *quieter*.
- If the ROLR changes from $+45$ dB to $+39$ dB, there is 6 dB *less loss* and, consequently, the receive path is *louder*.
- If the TOLR changes from -45 dB to -50 dB, there is 5 dB *less loss* and, consequently, the transmit path is *louder*.
- If the TOLR changes from -45 dB to -40 dB, there is 5 dB *more loss* and, consequently, the transmit path is *quieter*.

Another way of looking at both TOLR and ROLR is that if the number *increases* in value (becomes more positive or less negative) the path will be *quieter*, and as the number *decreases* in value (becomes less positive or more negative) the path will be *louder*.

X11 international ROLR and TOLR values are listed in **Table 40**. In addition, separate Handsfree receive (HRLR) and Handsfree transmit (HTLR) objective ratings can be defined. See **Table 41**.

Table 39
Receive and transmit transmission parameters (North America)

Value for prompt ROLR or TOLR in LD17	ROLR	TOLR
00	+45.00	-45.00
01	+45.85	-44.50
02	+46.70	-44.50
03	+47.55	-44.00
04	+48.40	-43.50
05	+49.25	-43.00
06	+50.10	-43.00
07	+50.95	-42.50
08	+51.80	-42.00
09	+52.65	-41.50
10	+53.50	-41.50
11	+54.35	—
12	+55.20	—
13	+56.05	—
14	+56.90	—
15	+57.75	—
16–31	—	—
32	+45.00	-45.00
33	+44.15	-45.50
34	+43.30	-46.00
35	+42.45	-46.00
36	+41.60	-46.50
37	+40.75	-47.00
38	+39.90	-47.50
39	+39.05	-47.50
40	—	-48.00
41	—	-48.50
42	—	-49.00
43	—	-49.00
44	—	-49.50
45	—	-50.00
46	—	-50.50
47	—	-50.50
48	—	-51.00
49	—	-51.50
50–52	—	-52.00
53	—	-53.00
54–63	—	—

Table 40
Handset receive and transmit transmission parameters (international)

Quieter					Louder				
LD17 value	Change from nominal		LD22 output		LD17 value	Change from nominal		LD22 output	
	ROLR	TOLR	ROLR	TOLR		ROLR	TOLR	ROLR	TOLR
#	dB	dB	dB	dB	#	dB	dB	dB	dB
00	0.00	0.0	+45.00	-45.00	32	0.00	0.0	+45.00	-45.00
01	0.85	0.5	+45.85	-44.50	33	0.85	0.5	+44.15	-45.50
02	1.70	0.5	+46.70	-44.50	34	1.70	1.0	+43.30	-46.00
03	2.55	1.0	+47.55	-44.00	35	2.55	1.0	+42.45	-46.00
04	3.40	1.5	+48.40	-43.50	36	3.40	1.5	+41.60	-46.50
05	4.25	2.0	+49.25	-43.00	37	4.25	2.0	+40.75	-47.00
06	5.10	2.0	+50.10	-43.00	38	5.10	2.5	+39.90	-47.50
07	5.95	2.5	+50.95	-42.50	39	5.95	2.5	+39.05	-47.50
08	6.80	3.0	+51.80	-42.00	40	6.80	3.0	+38.20	-48.00
09	7.65	3.5	+52.65	-41.50	41	7.65	3.5	+37.35	-48.50
10	8.50	3.5	+53.50	-41.50	42	8.50	4.0	+36.50	-49.00
11	9.35	4.0	+54.35	-41.00	43	9.35	4.0	+35.65	-49.00
12	10.20	4.5	+55.20	-40.50	44	10.20	4.5	+34.80	-49.50
13		5.0		-40.00	45	11.05	5.0	+33.95	-50.00
14		5.0		-40.00	46	11.90	5.5	+33.10	-50.50
15		5.5		-39.50	47	12.75	5.5	+32.25	-50.50
16		6.0		-39.00	48	13.60	6.0	+31.40	-51.00
17		6.5		-38.50	49	14.45	6.5	+30.55	-51.50
18		6.5		-38.50	50	15.30	7.0	+29.70	-52.00
19		7.0		-38.00	51		7.0		-52.00
20		7.5		-37.50	52		7.5		-52.50
21		8.0		-37.00	53		8.0		-53.00
22		8.0		-37.00	54		8.5		-53.50
23		8.5		-36.50	55		8.5		-53.50
24		9.0		-36.00	56		9.0		-54.00
25		9.5		-35.50	57		9.5		-54.50
26		9.5		-35.50	58		10.0		-55.00
27		10.0		-35.00	59		10.0		-55.00
28		10.5		-34.50	60		10.5		-55.50
29		11.0		-34.00	61		11.0		-56.00
30		11.0		-34.00	62		11.5		-56.50
31		11.5		-33.50	63		11.5		-56.50

Table 41
Handsfree receive and transmit transmission parameters (international)

Quieter					Louder				
LD17 value	Change from nominal		LD22 output		LD17 value	Change from nominal		LD22 output	
	HRLR	HTLR	HRLR	HTLR		HRLR	HTLR	HRLR	HTLR
#	dB	dB	dB	dB	#	dB	dB	dB	dB
00	0.00	0.0	+42.00	-44.00	32	0.00	0.0	+42.00	-44.00
01	0.85	0.5	+42.85	-43.50	33	0.85	0.5	+41.15	-44.50
02	1.70	0.5	+43.70	-43.50	34	1.70	1.0	+40.30	-45.00
03	2.55	1.0	+44.56	-43.00	35	2.55	1.0	+39.45	-45.00
04	3.40	1.5	+45.40	-42.50	36	3.40	1.5	+38.60	-45.50
05	4.25	2.0	+46.25	-42.00	37	4.25	2.0	+37.75	-46.00
06	5.10	2.0	+47.10	-42.00	38	5.10	2.5	+36.90	-46.50
07	5.95	2.5	+47.95	-41.50	39	5.95	2.5	+36.05	-46.50
08	6.80	3.0	+48.80	-41.00	40	6.80	3.0	+35.20	-47.00
09		3.5		-40.50	41		3.5		-47.50
10		3.5		-40.50	42		4.0		-48.00
11		4.0		-40.00	43		4.0		-48.00
12					44		4.5		-48.50
13					45		5.0		-49.00
14					46		5.5		-49.50
15					47		5.5		-49.50
16					48		6.0		-50.00
17					49		6.5		-50.50
18					50		7.0		-51.00
19					51		7.0		-51.00
20					52		7.5		-51.50
21					53		8.0		-52.00
22					54		8.5		-52.50
23					55				
24					56				
25					57				
26					58				
27					59				
28					60				
29					61				
30					62				
31					63				

Sidetone objective loudness rating

Sidetone is provided by coupling a portion of the transmitted voice signal back to the telephone receiver. This allows you to hear your own voice, which provides a natural quality to the conversation. The value of the SOLR is a measure of the loss of sidetone. The recommended SOLR value is +12 dB.

Table 42 lists the values allowed for LD17 prompt SOLR.

Table 42
Allowable SOLR values

SOLR	Loudness rating
0	7 dB
1	12 dB (default)
2	17 dB
3	22 dB
4	sidetone disabled
Note: The default value in X11 releases 14 and 15 is 0 (7 dB). The default value in releases 16 and later is 1 (12 dB). The recommended value for all releases is 1 (12 dB).	

As the SOLR value increases, less of the transmitted signal is coupled back to the receiver. As the SOLR value decreases, more of the transmitted signal (near-end person's voice, or room noise) is coupled back to the receiver.

Factoring in the return loss of the trunk interface, the default SOLR value of 12 dB produces an effective SOLR of 9 dB with nominal return loss on external calls.

Note that when the SOLR value (transmission setting) is changed, only the integral sidetone control circuits in the telephone are affected. Other sources that contribute sidetone (such as return loss at trunk interfaces at the PBX, at the CO, and through the entire network to the far end) are independent of the SOLR transmission setting.

Note: The SOLR download is accepted by all Meridian Modular Telephones except the M2216ACD-1 and M2216ACD-2 telephones that have sidetone values fixed at the default level of 12 dB.